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BELOPOLSKY'S RESEARCHES ON η AQUILÆ.

The variable character of η Aquilæ was discovered by PIGOTT in 1784, and from the observations since that time the period of its variation in brightness, ranging from 3.5 to 4.7 magnitude, has been determined with great accuracy. According to CHANDLER'S Third Catalogue of Variable Stars, the period is 7.176381 days, or somewhat more than seven days four hours.

In September, 1895, M. BELOPOLSKY reported to the Academy of Sciences of St. Petersburg that his spectrographic observations of this star indicated a variable velocity in the line of sight. During the past year he has again studied the star by means of photographs of its spectrum, taken with improved spectroscopic apparatus in connection with the 30-inch refractor at Pulkowa. His former results have been confirmed. He finds the velocity in the line of sight periodically variable, ranging from +1.61 to -18.63 miles per second. Assuming the variations of velocity to be due to orbital motion and with a period of revolution equal to the period of the star as a variable, he has determined elliptic elements, so as to satisfy the observed velocities in the line of sight. It is found that the times of minimum brightness and the times at which the velocity in the line of sight is the same as that of the motion of the system, do not coincide, and for this reason some explanation other than that of eclipses must be sought to explain the variations of brightness.

M. BELOPOLSKY has arrived at a like result in the case of δ Cephei, a variable star, whose range in variation of brightness and whose light curve are very much the same as those of η Aquilæ.

W. J. HUSSEY.

METEORS VISIBLE IN FULL DAYLIGHT.

The number of shooting stars or meteors that fall to the Earth in the course of twenty-four hours reaches high into thousands, but the great majority of them are small, and do not attract any particular attention. At very rare intervals, however, it happens that they are of sufficient size and brilliancy to be seen in the daytime. The following are among the instances to be found in astronomical records:—

On the afternoon of September 13, 1795, a meteoric stone, weighing fifty-six pounds, fell within thirty feet of a workman in Yorkshire, England. This stone fell with a loud explosion, and penetrated a foot of soil and half a foot of chalk rock.

About nine o'clock in the morning of September 10, 1813, another was seen to fall in southern Ireland. Its appearance was accompanied with the formation of a cloud of smoke in a clear sky. Soon after eleven distinct reports were heard, resembling the discharge of heavy artillery, followed by an uproar like that of the continued discharge of musketry. Bodies moving in a horizontal direction towards the west with great velocity came out of the cloud of smoke. One of these was seen to fall to the Earth, burying itself deep in the ground. It was immediately dug up, and found to be still hot and to have a sulphurous smell. It weighed seventeen pounds. Other fragments fell at the same time, and were picked up in the neighborhood.

In 1879 a meteor was seen to fall in the daytime in Southern Virginia with sounds likened to that of an earthquake.

On the afternoon of January 19, 1898, I observed a bright meteor from the Lick Observatory. It was merely a flash, from five to ten degrees in length. It appeared white against the clear sky and was visible for only a very short time, not more than a few tenths of a second. It was moving very rapidly towards the north in a path slightly inclined towards the Earth, and increasing in brightness along its course until its sudden disappearance. From the observatory it was seen almost directly in the west, but its distance must remain unknown, unless at least one other observation has been secured elsewhere. It was, however, probably far out over the Pacific Ocean.

The time of observation was 1^h 8^m 40^s P. S. T. The azimuth of the point of disappearance, as seen from the Lick Observatory and subsequently determined with surveyor's transit, was south ninety-three degrees west, and its altitude was estimated to be about eight degrees.

E. F. CODDINGTON.

January 21, 1898.

REPORT ON THE TEACHING OF ASTRONOMY IN THE UNITED STATES.

The next report of the U. S. Commissioner of Education will contain a chapter by Dr. EDWARD S. HOLDEN on the teaching of astronomy in the primary and secondary schools, and in the colleges and universities of the United States.

Dr. HOLDEN was elected a member of the American Philosophical Society of Philadelphia at its meeting in December, 1897.

R. G. A.